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**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking on the
Commission's Own Motion to Consider
Alternative-Fueled Vehicle Tariffs, Infrastructure
and Policies To Support California's Greenhouse
Gas Emissions Reduction Goals.

Rulemaking R.13-11-007

**GREEN POWER INSTITUTE REPLY COMMENTS ON AMENDED SCOPING
MEMO AND RULING**

May 31, 2016

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GREEN POWER INSTITUTE REPLY COMMENTS ON AMENDED SCOPING MEMO AND RULING

The Green Power Institute respectfully submits these reply comments on the **Amended Scoping Memo and Ruling (“ASMR”)**, mailed March 30, 2016.

The Green Power Institute (GPI) is the renewable energy program of the Pacific Institute, a non-profit environmental and social advocacy group. Under the direction of Dr. Gregory Morris, the Green Power Institute performs research and provides advocacy on behalf of renewable energy systems and the contribution they make to reducing the environmental impacts of fossil-based energy systems. The Green Power Institute is located in Berkeley, California.

GPI is a strong advocate of transportation electrification (“TE”) and we respond below to some of the parties’ comments on the ASMR, noting with satisfaction that we agree with most parties’ comments.

I. Reply comments

a. SDG&E

GPI appreciates SDG&E’s focus on a broader range of potential utility investments in TE than many other parties. For example, SDG&E states (SDG&E opening comments, p. 7):

Utility proposals will address customer-specific needs, market barriers and technology solutions, which will allow utilities to explore:

- Solutions for specific transportation customer segments
- Resources to help customers overcome adoption barriers and seize opportunities (e.g., resources to help prepare grant funding applications)
- Comprehensive educational responsibilities with all stakeholders

As SB 350 describes, the Commission and utilities are to focus on “programs and investments,” which for GPI indicates a mandate to consider possibilities beyond infrastructure investments in EV charging infrastructure or related investments.

SDG&E also urges the Commission to focus on the “what, not the how” of TE in its final guidance on IOU applications (p. 7). GPI agrees with this approach as there is some danger in being overly prescriptive in terms of potentially barring promising solutions that the Commission may not have considered.

b. PG&E

PG&E recommends that a statewide working group be formed (PG&E opening comments, p. 2): “PG&E strongly recommends that the first order of business in this expanded rulemaking be an initiative by the Commission and all transportation electrifications stakeholders in the State to establish a statewide formal collaborative among all appropriate private and public stakeholders to coordinate the multiple programs and funding sources that currently support transportation electrification.”

The GPI agrees with this recommendation.

GPI also agrees with PG&E’s recommendations with respect to guiding principles, as follows (pp. 3-4):

- The guiding principles should remain sufficiently broad to allow the IOUs to craft innovative proposals related to transportation.
- It would be useful to have clear and simple submission guidelines for accelerated approval of utility initiatives: These criteria should:
 - Provide clarity about the role that the Commission intends for utilities in supporting and deploying transportation electrification.
 - Identify activities for which the utilities can receive up-front, advance approval to accelerate transportation electrification. This does not preclude the use of a variety of development models: activities falling

outside these “advance approval” areas could be considered by the Commission on a case-by-case basis.

- Include details about the frequency at which the CPUC would prefer IOU activities to be evaluated and, if necessary, the process for modifying activities to allow for the integration of lessons learned.

PG&E urges the Commission to take a broad view of “electrification” and to include efforts to accelerate hydrogen fuel cell vehicles (p. 4). For the reasons described in more detail below in our response to CARB’s recommendations, GPI opposes including hydrogen fuel cell vehicles in this effort. The basic objection is that using renewable electricity in hydrogen fuel cell vehicles is inherently 2.5-3 times less efficient than using that same electricity in battery electric vehicles. Ratepayers and the environment can’t afford such a massive loss of efficiency if we are to shift our transportation system away from petroleum.

GPI supports PG&E’s highlighting the role of education and outreach in achieving widespread TE. PG&E writes (p. 5):

Customers considering alternative fuel options may benefit from information about rates and the way in which operations can be optimized to lower operating costs. In addition, encouraging IOU education and outreach programs can facilitate customer participation in other utility programs, such as energy efficiency, demand response and distributed generation programs. These other demand side technologies can be employed to mitigate up front costs associated with transportation electrification.

PG&E adds (*id.*): “In nearly all cases, IOU education and outreach will be critical to the success of these efforts.” We support looking in a comprehensive and robust manner at the E&O options that IOUs and third parties could employ in achieving widespread TE and we have described in previous comments in this proceeding various ways that this could be achieved.

c. SCE

SCE recommends that the Commission adopt a number of principles as it moves forward with the TE application process (SCE opening comments, pp. 1-2). GPI generally agrees with SCE’s proposed principles and we add the following recommended principles:

1. Ensure that broad utility involvement in TE does not unnecessarily crowd out private sector investment.
2. Ensure that robust education and outreach programs are an integral part of TE efforts coordinated by the Commission.

GPI agrees with SCE's recommended (p. 3, p. 15) two-track application process with one "fast track" for foundational TE efforts and then a normal approval track for non-foundational efforts.

GPI agrees with SCE's strong recommendations for aggressive near-term measures to accelerate EV adoption (SCE, p. 9):

[F]or the growing but nascent EV market, the next two to three years are critical for establishing a longer-term growth rate in EV adoption, as the market is expected to include near-term introduction of several more affordable, longer-range vehicles. SCE believes that the adoption of these vehicles, supported by a growing charging network, could catalyze broad adoption of EVs at the rate necessary (see Figure 1) to achieve California's EV goals. In order to capture this opportunity, it is essential to expedite the near-term growth in EV infrastructure.

We disagree, however, with the last line of this statement in that it is clear that the importance of the next few years weighs heavily in favor of not just increased infrastructure investments but all other measures and programs that can increase EV sales. GPI has highlighted throughout this proceeding the need to focus far more on education and outreach for EVs in order to increase EV sales, a conclusion also reached by every major policy review, and yet largely ignored by the Commission to date. We won't re-hash the arguments in our motion filed jointly with JMP, and resolved in the negative by the ASMR, as we wrote in our opening comments we strongly urge the Commission to reconsider its ruling on our joint motion given the consensus of policy recommendations on this issue and the failure thus far to address the appropriate scope and scale of third-party E&O efforts for EVs.

SB 350 and the ASMR are clear in describing new “programs and investments” to accelerate TE—not just investments for infrastructure, as SCE’s quote above seems to suggest is SCE’s focus. New programs for TE can and should include non-infrastructure programs.

Similarly, SCE’s comments, while laudable on many counts, seem to give short shrift to the role of E&O in accelerating EV adoption. With every policy analysis that has looked at ways to accelerate EV adoption focusing strongly on E&O, sometimes including E&O as the single biggest area for improvement, this oversight is a major omission. SCE does highlight E&O at p. 18 of its comments as one of four areas ripe for scaling up and GPI appreciates this nod to E&O. We urge, however, SCE to focus more on E&O in terms of both IOU-managed E&O but collaboration and coordination with third party E&O efforts as these ramp up in the coming years. All hands will need to be on deck if we are to meet the state’s ambitious EV and GHG goals and this will require a strong focus on E&O.

SCE also argues that TE program adoption should be not be delayed 3-4 years while the IRPs are being developed (SCE, p. 14). GPI agrees with this recommendation and we hope that the IOUs can submit creative TE applications within the next two years.

d. NRDC

NRDC states (NRDC opening comments, p. 1) that “the relevant science is clear. The inescapable conclusion of the research presented at the workshop by experts from California’s energy agencies, ICF, E3, EPRI and NRDC is that immediate utility-scale investment is needed across the entire transportation sector. This conclusion is consistent with other recent analysis published in peer reviewed scientific journals, as well reports published by national and international scientific bodies.” NRDC adds (p. 3) that “the Commission’s focus on transportation electrification and the investments made by utilities to achieve widespread transportation electrification should be dramatically scaled up to achieve parity with the resources devoted to the procurement of renewable energy and energy efficiency.”

GPI strongly agrees with these statements and we urge the Commission to relatively quickly approve the framework to guide utility applications for widespread TE where a utility investment may make sense.

NRDC warns of the potential for lost consumer savings due to higher than needed EV charging electricity rates (p. 6):

Unfortunately, on many residential, commercial, and industrial rates, and at most public charging stations, electricity is often more expensive than gasoline. Likewise, the price is often masked by complicated utility tariffs and by third-party pricing schemes that fail to convey the cost of electricity with anything approaching the clarity of the price of gasoline at the pump. The Commission should carefully review its current policies and use its authority to ensure that what should be a market opportunity in the form of significant and clear fuel cost savings does not become a market barrier in the form of non-transparent pricing in excess of petroleum fuels.

GPI also agrees with this statement and urge the Commission to expediently look into the demand charge issue to examine ways in which demand charges may be reduced for EV charging without cost shifting to ratepayers. This issue has already been scoped in this proceeding and we look forward to this issue receiving the attention it deserves.

e. CSE

CSE argues for another principle to be included in this proceeding: “Encouraging program transparency and shared learning.” (CSE p. 3). GPI agrees strongly with this recommendation.

f. CARB

CARB requests that the Commission clarify that hydrogen production and compression is in scope with the TE effort in this proceeding (CARB workshop presentation, April 29). GPI

disagrees with this recommendation. As the CARB presentation itself makes clear there are many viable EV bus, both slow and fast charging, options available now and on the way. Given that hydrogen faces a fundamental [efficiency loss](#) of 2.5-3x (based on UC Irvine lifecycle analysis) when compared to EVs there should be a strong bias in favor of EV solutions when available. Put simply, why should the Commission and the IOUs expend ratepayer funds for solutions that are 2.5-3x less efficient than other available solutions? Why would ratepayers pay \$3 for a green solution when they can pay \$1 for alternative viable solutions that are here now?

Our feeling is that the alternative transportation policy community will soon catch up to this reality and realize that hydrogen solutions are a dead end for most transportation solutions because of this fundamental difference in efficiency of energy conversion. Exemplifying this ongoing shift in thinking, Honda surprised (pleasantly) many observers by announcing in May that they would be offering EV and PHEV versions of their Clarity FCV platform, bowing to the reality that EVs and PHEVs are already here and affordable, along with the 2-3x efficiency improvement that comes from using electricity directly as a fuel in battery electric vehicles rather than losing the lion's share of that energy by converting electricity to hydrogen and then back to electricity in the FCV fuel cycle.

II. Conclusion

GPI urges the Commission to adopt the recommendations described above.

Dated: May 31, at Berkeley, California.

Respectfully Submitted,

A handwritten signature in blue ink, appearing to read "Gregg Hume", is positioned above a solid horizontal line.

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